JOHN WAYNE AIRPORT
ORANGE COUNTY

John Wayne Airport's Fly Friendly Program
Scoring Methodology

John Wayne Airport's (JWA) Fly Friendly (FF) program seeks to:

- Educate General Aviation (GA) jet operators about ways to reduce their noise at and around the airport, as measured by JWA's Noise Monitoring Stations (NMS)
- Encourage operators to voluntarily adopt more sustainable aviation practices and technologies that help contribute towards reducing environmental impacts from aircraft
- Score these voluntary actions and honor participants with the top three (3) highest scores in each tier through an annual recognition initiative

Operator Tiers

JWA's FF software program groups operators into the following tiers for scoring purposes. It is important to note that Part 135 Operators (charter) are separated from N-Number Operators because they have much more frequent operations (takeoffs and landings):

- Tier 1: Part 135 Operators 1 – 15 (top 15 in terms of annual operations)
- Tier 2: Part 135 Operators 16 – 30
- Tier 3: Part 135 Operators 31 – those having at least 24 annual operations (12 arrivals and 12 departures)
- Tier 4: N-Number Operators – those having at least 24 annual operations (12 arrivals and 12 departures)

Number of Awards

The Fly Friendly software combines the following 4 elements into a weighted score for each operator on an annual basis and JWA awards 1st, 2nd and 3rd place awards per tier, for a total of 12 annual awards.

- 4 tiers x 3 awards per tier = 12 awards per year

Specific Elements and Criteria Evaluated by JWA FF

Elements 1 and 2 as listed below are the program's primary, measurable elements gathered through the monitoring of aircraft operations and noise levels. Elements 3 and 4 are subjective and considered bonus elements. The final score for each operator is determined by summing the weighed primary elements (1 and 2) and then adding any additional bonus element points earned (3 and 4).

1. Quietest Departures: 75 Points
2. Nighttime Noise Reduction: 25 Points
3. Environmental Stewardship & Sustainability: (up to) 5 Bonus Points
4. Most Engaging: (up to) 5 Bonus Points

Primary Elements

1. Quietest Departures: Awards points to GA jet operators whose aircraft produce the least amount of measurable noise on departure over the full initiative year, as verified by the Airport's noise monitoring system data. This measure has three sub-elements that include the average measured noise levels from NMS 1S, 2S, 3S, 4S, 5S, 6S and 7S, minimize higher noise events and the noise certification level of the operator's fleet. Ways to achieve reduced noise include, but are not limited to:
    - Technical: Modify existing aircraft; acquire and utilize newer, quieter aircraft
    - Operational: Fly aircraft in accordance with the quietest GA jet departure procedure for JWA (National Business Aviation Association's Standard Noise Abatement Departure Procedure; details available at www.ocair.com/flyfriendly).

2. Nighttime Noise Reduction: Awards points to GA jet operators who are able to demonstrate the highest voluntary reduction in their number of non-emergency flights, when safely possible, during the following nighttime/early-morning hours as compared to the previous calendar year:
    - Departures: 10 p.m. to 7 a.m. Monday through Saturday and 8 a.m. Sunday
    - Arrivals: 11 p.m. to 7 a.m. Monday through Saturday and 8 a.m. Sunday

Bonus Elements

3. Environmental Stewardship and Sustainability: Awards points to operators who contribute up to $4,500 per calendar year to support:
    - The production of native plants for use in ecological restoration and habitat enhancement projects in canyon areas impacted by wildfires through the Irvine Ranch Conservancy at http://www.irconservancy.org/donate.html; or
    - The restoration of native wetland habitats in the Newport Bay Ecological Reserve and Nature Preserve through the Newport Bay Conservancy at newportbay.org/donate

    Keeping these beautiful, biologically diverse ecosystems healthy helps provide all Orange County residents with cleaner air, water and abundant recreational opportunities while offsetting some environmental impacts from aircraft.

4. Most Engaging: Awards points to GA jet operators who voluntarily implement outreach and education efforts themselves such as: providing noise abatement education to pilots; distributing FF program toolkit materials in the community; and/or attending up to (five) 5 meetings per year of any Orange County community meeting focused on aviation impacts. Visit www.ocair.com/flyfriendly for more information and to access the related submission form.

How FF is Quantified

Each of the FF program elements are quantified based upon operational and noise data collected as part of the Airport's noise monitoring system, as well as through the logging of information related to contributions and attendance at meetings. This is described in the following paragraphs:

1. Quietest Departures (75 total points): This measure consists of three (3) sub elements totaling a maximum of 75 points; these sub elements are listed below:

   Quiet Departure Noise Score (sub element 50 pts). This is determined from the average noise generated during departure on Runway 20R at each of the seven NMS locations along the Back Bay departure route (NMS 1S through 7S). The noise monitoring system collects the operational information and flight path data for the GA jet departures at JWA. The system also continuously measures the noise levels at each of these seven locations, which determines noise events and are then correlated with the aircraft that cause the noise event. The noise metric used to quantify the noise level from each event is the Single Event Noise Exposure Level (SENEL). The measured SENEL values for an operation at each of the seven NMS locations are then averaged to determine the noise associated with that departure. A lower average noise level results in a higher quiet departure noise score. The scaling of the noise levels is based upon historical noise levels measured in past years at JWA. The scaling is intended to provide the opportunity to show change in the average departure noise over time and allow room for the anticipated reduction in future noise levels. For example, an average departure noise of 75 decibels (dB) SENEL is the full 50 points and an average of 95 dB SENEL results in 0 points. Note these values are an average of all NMS locations and not any one NMS, and allow for future new generation, quieter aircraft.

   Minimize Higher Noise Events Score (sub element 20 pts). The goal of this sub element is to quantify and minimize the number of noise events that are higher than the typical noise events generated by departing GA jet aircraft. A higher noise event may occur at an NMS if: the aircraft is an older generation louder aircraft, flown using additional thrust, flew lateral to the path over an NMS not normally overflown, or flew lower than typical for that location. The voluntary FF high noise event level is different for each NMS location; historic data is used to determine the level to use at each NMS. Roughly, 10% of the noise events exceed the FF NMS level based upon historical operations over the past four years. The level at night is 5 dBA lower than the value used during the daytime. If an operator does not exceed the level for any operation, they will receive a score of 20 points. The more exceedances per total operations, the lower the FF score.

The total number of exceedances is compared with the total Runway 20R departures to get a percentage per departure. The high noise event level for each NMS are presented below:

NMS	Day SENEL	Night SENEL
1S	92	87
2S	92	87
3S	92	87
4S	88	83
5S	88	83
6S	89	84
7S	85	80

Quietest Fleet Score (sub element 5 pts). This FF measure is designed to acknowledge and encourage the use of the quietest of GA jet aircraft that are available today or potentially in the foreseeable future. This measure is based upon the FAA's Noise Certification 14 CFR Part 36 noise level. The most complete data for aircraft noise certification is EASA (European Union Aviation Safety Agency). An aircraft qualifies if its highest noise certification level of the three measurement points within the EASA Certification Noise Levels database is 10 dB or greater than the FAA Stage 5 noise certification level. Stage 5 is currently the most stringent noise certification limit; aircraft certified as 14 CFR Part 36 Stage 5 represent the quietest aircraft available based upon their certification. This measure totals the percentage of an operator's fleet that is Stage 5 at JWA. If an operator flies an all Plus 10 Stage 5 fleet or is a single operator of a Plus 10 Stage 5 aircraft, their score is 100% and represents 5 points. An operator with no Plus 10 Stage 5 aircraft at JWA would receive a score of 0 with a mixed fleet scoring between 0 and 5 based upon the percentage of Plus 10 Stage 5 operations. The aircraft that qualify are listed below:

Aircraft	Description
C25M	525 Citation M2
C510	Cessna 510 Citation Mustang
C525	Cessna 525 CITATION CJ1
C680	Cessna 680 Citation Sovereign
C68A	Cessna 680 Citation Latitude
C750	Cessna 750 Citation X
E50P	Embraer EMB-500 Phenom 100
E545	Embraer EMB-545 Phenom
E55P	Embraer EMB-505 Phenom 300
EA50	Eclipse 500
HDJT	HA-420 HONDAJET
LJ60	Learjet 60

SF50 Cirrus SF-50 Vision

2. Nighttime Noise Reduction (25 total points): This measure tracks the number of operations that occur during nighttime/early-morning hours. Using data from the Airport's noise monitoring system, aircraft that depart or arrive during nighttime/early-morning hours are identified. The operation time is based upon noise event time at NMS locations (the same enforcement protocol used in identifying General Aviation Noise Ordinance (GANO) violations). The nighttime/early-morning hours are as follows:

    - Departures: 10 p.m. to 7 a.m. Monday through Saturday and 8 a.m. Sunday
    - Arrivals: 11 p.m. to 7 a.m. Monday through Saturday and 8 a.m. Sunday

    The total number of nighttime/early-morning operations is divided by the total operations to determine the percentage of nighttime/early-morning operations. For any operator without any nighttime/early-morning operations, they earn the full 25 points. The points earned are then reduced based upon the percent of nighttime/early-morning operations multiplied by 10.

3. Environmental Stewardship and Sustainability (up to 5 bonus points): Awards points to operators who contribute up to $4,500 per calendar year to support:
    - The production of native plants for use in ecological restoration and habitat enhancement projects in canyon areas impacted by wildfires through the Irvine Ranch Conservancy (IRC) at http://www.ircconservancy.org/donate.html; or
    - The restoration of native wetland habitats in the Newport Bay Ecological Reserve and Nature Preserve through the Newport Bay Conservancy (NBC) at https://newportbay.org/home/transactions/donate/

    Donations will be tracked by the IRC and the NBC and reported quarterly to JWA.

    - $500 = 1 point
    - $1,500 = 2 points
    - $2,500 = 3 points
    - $3,500 = 4 points
    - $4,500 = 5 points

4. Most Engaging (up to 5 bonus points): Awards points for attendance at any Orange County community meeting focused on aviation impacts. One point is awarded for each meeting attended throughout the calendar year, with up to 5 points available for award.

Questions? Please visit www.ocair.com/FlyFriendly or email FlyFriendly@ocair.com.